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A REPORT ON PLANS FOR THE FUTURE OF
MASSACHUSETTS MARITIME ACADEMY

November 22, 1989

HIGHLIGHTS OF TRUSTEES' REPORT ON
THE FUTURE OF MASSACHUSETTS MARITIME ACADEMY

EXCELLENCE SHOWN AT MASSACHUSETTS MARITIME ACADEMY BY GRADUATES HAVING THE HIGHEST RATE OF SUCCESS OF ALL U. S. MARITIME ACADEMIES IN PASSING COAST GUARD LICENSURE EXAMS (99% PASS ON FIRST ROUND). EXCELLENCE ALSO SEEN IN ACADEMY BEING SELECTED AS ONE OF COMMONWEALTH'S CENTERS OF EXCELLENCE IN AFFILIATION WITH WOODS HOLE OCEANOGRAPHIC INSTITUTE AND SOUTHEASTERN MASSACHUSETTS UNIVERSITY. [See pages 2 & 11]

POSITIVE ECONOMIC CONTRIBUTION TO THE COMMONWEALTH FROM MASSACHUSETTS MARITIME ACADEMY'S STUDENTS, ALUMNI, AND THE INSTITUTION ITSELF IS ANNUALLY MORE THAN \$85,000,000 [See page 3]

PLACEMENT OPPORTUNITIES NEVER BETTER FOR ACADEMY GRADUATES WITH MORE JOBS AVAILABLE THAN GRADUATES TO FILL THEM. [See page 2]

ENROLLMENT AT THE ACADEMY WILL GROW TO 800 STUDENTS BY 1994 WHILE THE NUMBERS OF WOMEN & MINORITY STUDENTS INCREASE [See pages 6,7 & 11]

NEW MAJORS PLANNED TO BE AVAILABLE FOR THE CLASS ENTERING IN SEPTEMBER, 1990. THEY ARE FACILITIES & PLANT ENGINEERING; MARITIME MANAGEMENT; AND MARITIME ENVIRONMENTAL PROTECTION. ALL BUILD ON FOUNDATION OF PRESENT MAJORS IN MARINE TRANSPORTATION & MARINE ENGINEERING. [See pages 4 & 5]

SUPPORT FOR NEW MAJORS AND INCREASED STUDENT RECRUITMENT IS POSSIBLE THROUGH CAREFUL SHIFTS IN THE ACADEMY'S RESOURCES. [See page 10]

A STRONG AND EFFECTIVE ADMINISTRATION IS ESSENTIAL FOR THE ACADEMY. BECAUSE OF HIS STRENGTHS THE TRUSTEES SUPPORT PRESIDENT JOHN F. AYLMER FOR THE INDEFINITE FUTURE. HE FULLY UNDERSTANDS THE NEED TO CHANGE HIS PERSONAL STYLE OF MANAGEMENT AND COMMUNICATION WITH THE FACULTY.

[See pages 7, 8, 9]

THE TRUSTEES RECOGNIZE THE NEED TO SUPPORT THE CONCEPT OF UNITY WITH ALL PERSONS AND INSTITUTIONS TRYING TO IMPROVE HIGHER EDUCATION IN MASSACHUSETTS THROUGH AFFILIATIONS, COOPERATION, OR CONSORTIUMS.

[See page 11]

N.B. Page references given above refer to the attached eleven page Extract drawn from the much larger Report On Plans For The Future Of Massachusetts Maritime Academy which follows the Extract.

EXTRACT

The Future of Massachusetts Maritime Academy A Plan from the Academy's Trustees to the Board of Regents of Higher Education in Massachusetts

Rationale for Plan

On May 30, 1989, Dr. Franklyn G. Jenifer, Chancellor of Higher Education in the Commonwealth of Massachusetts, made the following recommendation to the Trustees of the Massachusetts Maritime Academy:

"... I recommend that the Academy's Board of Trustees submit a detailed plan for the future of the Academy to carry out the changes recommended by the Visiting Team Report. Specifically, this plan should include the following: (a) a selective broadening of the mission of the Academy consistent with the recommendations of the Visiting Team; (b) the establishment of an enrollment goal of 800 full-time students over a four year period; (c) a specific plan to recruit a more diversified student body; (d) changes in the leadership of the Academy that the Visiting Team believes are necessary to implement the plan; and (e) reallocation of internal resources required to carry out the plan. In developing this plan the Trustees should give serious consideration as to whether a merger with Southeastern Massachusetts University would accomplish the objectives set forth in the report."

Rationale for the Future of Massachusetts Maritime Academy

". . . The new dominant need is to insure the survival of the American standard of living and quality of life by achieving true competitiveness in international trade. This requires, above all, a superbly trained, educated and motivated work force

[From A Plan for Excellence, by Paul E. Tsongas, Chairman,
Board of Regents, February 1, 1989]

What follows was developed from a much larger and more detailed Plan which accompanies this Extract. Because of its crucial importance the entire statement on leadership of the Academy has been included in the Extract.

Historical Statement

Massachusetts Maritime Academy was established by the state legislature in 1891 as the Massachusetts Nautical Training School and graduated its first class of twenty cadets in Boston, April 13, 1895. For years the Academy was berthed in Boston, then for a long period in Hyannis, and moved to its present Buzzards Bay site in 1948. In 1946 authorization to grant the Bachelor of Science degree as granted by the Commonwealth. In 1964 the Academy became a member institution of the Massachusetts State College System. Ten years later the Academy was initially accredited by the New England Association of Colleges and Secondary Schools.

The primary mission of the Massachusetts Maritime Academy during its first century has been to educate and train young people for professional seagoing careers as junior deck or engineering officers on ocean-going merchant vessels.

Success of Mission

For years graduates of Massachusetts Maritime Academy have placed at the top among graduates of the six maritime academies taking the licensing examinations of the U. S. Coast Guard. Placement of graduates has been excellent, with current demand outstripping supply. Graduates not only serve at sea, but also take positions with engineering, utility, and other companies throughout the Northeast.

Future Demand for Graduates

"Mr. John Aylmer, President
Massachusetts Maritime Academy
Buzzards Bay, Massachusetts

".... Job opportunities of 1989 went begging and we do not want to have a repeat of same in 1990. Therefore we would like to make arrangements ... to discuss job opportunities and the U. S. Flag Merchant Marine with the graduating class.

Very truly yours,

Jerome E. Joseph
Executive Vice President, District 2
Marine Engineers Beneficial Association
Associated Maritime Officers

Massachusetts Maritime Academy's
Financial Contribution to the Commonwealth

"The institution [M.M.A.] generates a total (direct, indirect and induced) of \$15,385,000 in [annual] economic activity within Massachusetts. The school's alumni who live in Massachusetts generate an additional \$56,554,147 in direct spending within the state of which \$13,535,879 is in the form of state and local taxes. Current students spend about \$659,000 within Massachusetts of which \$134,813 is in taxes to the state and local taxing authorities. Both groups (combined) save about \$14,664,254 per year and most of this money is deposited in Massachusetts financial institutions

"it can be said that the state of Massachusetts receives at least \$15,385,000 in total economic impact from the institution itself, \$70,948,409 from M. M. A. Massachusetts alumni, and \$929,119 from current students in return for its allocation of \$8.3 million (in 1987) to M. M. A. in operating budget. Recognizing the conservative estimates these figures represent, the state receives a return of at least 10.5 times (1,051 percent) its budget allocation to the Academy in tax revenues, direct and indirect spending, induced spending, and savings from the institution, alumni, and current students."

[From a study by Robert A. Comerford, Ph.D., Professor at the University of Rhode Island, entitled Economic Impact of Massachusetts Maritime Academy, 1988.]

Steps to "broaden the mission of the Academy"
Consistent with the Recommendations of the
Visiting Team

<u>Current Majors:</u>	Marine Transportation	(Deck Officer)
	Marine Engineering	(Engineering Officer)

<u>Current Secondary</u>	<u>Name</u>	<u>Date Introduced</u>
<u>Study Concentrations</u>	Business Management	September, 1985
<u>of six courses each</u>	Mechanical Engineering	" " , 1985
	Marine Fisheries	" " , 1986
	Facilities & Plant Engineering	" " , 1987

Future Proposed [During the past two years seven different majors have
Majors been considered by the faculty and administration. Two
have survived this examination. A third proposal,
growing out of the above mentioned study as well as
trustee interest, is also under study. Each of the new
majors build upon already existing strengths of the
Academy]

- (a) B.S. Facilities & Plant Engineering
- (b) B.S. Maritime Management
- (c) B.S. Maritime Environmental Protection

(a) Facilities & Plant Engineering builds on the existing secondary concentration in this area, and will meet extremely strong demand for M. M. A. graduates by industry and utilities. In the past five years over forty graduates have been hired by Pilgrim and Seabrook alone, as well as by numerous other utility companies. Over one hundred graduates are currently engineers for Stone & Webster (the largest industrial engineering corporation in the northeastern United States).

(b) Maritime Management has developed from the existing secondary concentration in this area. The Academy's Placement Office research indicates strong demand for such graduates in marine, trucking, and rail transportation, entering the fields as lower level managers and administrators. Openings exist for steamship agents, cargo terminal operators, traffic administrators, freight trackers, intermodal freight forwarders, and cargo brokers.

(c) Maritime Environmental Protection comes naturally from the faculty's interest in and knowledge of marine ecology and the proximity of Woods Hole Oceanographic Institute, which is now considering an affiliation with M. M. A. to develop the major. Students will study marine ecology and environmental laws and regulations to be prepared for work as enforcement officers, to prevent further degradation of the ocean and its shores. Assisted in preparing this major by Dr. Craig Dorman, an Academy Trustee as well as Director of W. H. O. I., the M. M. A. faculty and administration are working to determine demand for this unique major. Building on the maritime tradition of the Academy, students in the major will use research vessels of the Academy. Students will belong to the Cadet Regiment, and thus be better prepared for some of the difficult aspects of enforcement of laws and regulations.

Success of Academy Graduates

Due in Considerable Part to

Membership in Regiment of Cadets Within the para-military program of the Academy, the Regiment of Cadets serves two functions with marked success, inculcating both discipline and responsibility. Because of the responsibility, the Academy's Freshmen and Sophomores are assured academic assistance from upperclass men and women who act as student tutors, adding substantially to the well recognized work of the faculty as both teachers and mentors.

Of the three new proposed majors listed above, two, Facilities & Plant Engineering and Maritime Environmental Protection would require all students in those majors to be part of the Cadet Regiment. Maritime Management students will be given a choice of living on campus as part of the Regiment, or commuting.

The Academy's Excellent Fisheries Program is long established and annually serves over 1,400 fishermen and boat operators under a Sea Grant Program through an affiliation with M. I. T. The Fisheries Program offered 65 specialized seminars and workshops to the public in 1988 - '89. It is the best such program in the nation.

Plan to Raise the Academy's Enrollment to 800 in Four Years
And Increase Diversity of Student Body

Present Enrollment Situation of M. M. A.

Year	<u>1989</u>	<u>1987</u>	<u>1986</u>	<u>1984</u>	<u>1982</u>	<u>1980</u>	<u>1978</u>	<u>1973</u>	<u>1972</u>
Enrollment	601	602	649	803	839	930	886	598	381

Enrollment Problem in all Massachusetts Engineering & Computer Science Programs- Like all other Massachusetts colleges and universities having engineering departments the enrollment at M. M. A. has dropped steadily in recent years. Percentage declines are noted below:

<u>Institution</u>	B. U.	M.M.A.	M.I.T.	N.E.U.	S.M.U.	Tufts	W.P.I
<u>% Decline</u>	-11%	-19%	-12%	-31%	-18%	-11%	-18%

Addition of Women to Cadet Regiment For over a decade the Academy has accepted women into its major programs, but with few substantial numbers until recently. Due to an improved recruitment program last year eighteen women were added in September, 1989, and there are now thirty-three women in the Regiment. The goal is to increase the number of women in the student body to a minimum of ten percent in four years time.*

Increased Enrollment in Faculty, trustees, and administration at the Academy are committed to increase the student body to a total of 800 in the next four to five years while at the same time increasing minority representation in the enrollment. The Trustees have pledged to increase the proportion of minority students in the Academy's enrollment in spite of declining high school graduation figures (more than a 40% decline will take place between 1980 and 1992) and the knowledge that currently minorities and women collectively represent less than one percent of the labor force in the United States maritime industry. The Trustees believe that the new programs under consideration, particularly Facilities & Plant Engineering and Maritime Environmental Protection will have a strong appeal to a segment of the high school graduating class not previously reached by the Academy.

* At least eighty women cadets are expected to be enrolled by 1994.

Plans for Student Recruitment, 1989-1990

1. Every Massachusetts high school will be visited by a representative of the Academy during the year (Admission Officer, Alumnus, Cadet, or Faculty Member).
2. Efforts will be doubled to recruit minority students including the use of on-campus invitational days and special emphasis on programs such as the Sea Grant summer program (last summer 50 South Boston High School 9th grade students participated) to introduce them to the maritime experience.
3. Additional staff have been added to the Admissions Office specifically charged with minority recruitment, including a new Associate Director of Admissions from a minority group.

The Question of the Academy's Leadership

The Board of Trustees of Massachusetts Maritime Academy is truly concerned about the leadership of the College. We want the best person we can find for the position of President. The Trustees know that there are different styles of leadership in colleges and universities. Among these are the authoritarian, the collegial, the diplomat/politician, and the scholar among scholars (similar to the collegial). We believe that the needs of a college at a given time determine the nature and style of presidential leadership.

More than eight years ago, following President Lee Harrington's death, John F. Aylmer became President of the Academy. A graduate of Massachusetts Maritime Academy who grew up and worked on Cape Cod, he followed the sea for a time, then moved into town and state politics in the minority party, and found time to earn a Master's degree in Education and a J.D. degree. President Aylmer was chosen from a considerable field of candidates due to his great interest in the Academy, his years of work in the Massachusetts Senate to help assure the building of the present campus, and the belief that he could return discipline and order to what had become a trouble wracked campus. After massive enrollment increases in the mid-1970s, from 381 cadets in 1972 to 801 in 1975, the Academy's academic quality suffered and its graduates were less desired by shipping companies than in the past.

When Aylmer became President he was fortunate in inheriting a strong faculty and a strong and able academic dean, and he soon added strength in other areas. John Gardner, author of Excellence, Self-Renewal, and No Easy Victories, recently completed a volume on Leadership. His new book results from study and personal observation of what makes the "best leader." He states -

"The best leader is one who ensures that appropriate talent and skill are built into the team. Every President since Truman has admired the spunky, plain spoken man from Missouri. I suspect it appeals to them that a man so battered by criticism while in office could be so well treated by History. But I have not known one of them who, in praising Truman, mentions one of his greatest qualities - his gift for surrounding himself with individuals of exceptional quality."

As Trustees we find President Aylmer has a similar ability. The administration working with him is strong, able, and active. The Regiment of Cadets is well disciplined and develops strong student leaders. The faculty is distinguished by depth of experience and breadth of knowledge. The Vice President for Academic Affairs (who prefers the title of Academic Dean) is respected and appreciated by the entire campus. The success of the current Vice President of Administration and Finance is recognized by faculty, staff, and trustees. The present master of the training ship Patriot State is well regarded by cadets and faculty on their annual cruise, some of the cadets privately calling him a "real salty dog." President Aylmer has surrounded himself with able administrators and faculty.

Further, in part due to his twelve years in the Massachusetts Senate, he has helped to assure that the institution he heads has strong financial support for its mission. He was instrumental in obtaining the Patriot State training ship and continuing support for it from MARAD.

After stating the above, the Trustees are aware of some of President Aylmer's weaknesses. Though he has a real "open door" policy, which some members of the College community feel free to use, he has not been a first rate communicator with his faculty. Like many people he gives way at times to bluntness or sarcasm, often no doubt after severe provocation, but never wisely. The Trustees are pleased to note distinct improvement this semester in communication between President and faculty

and will continue to monitor its progress. His ego is strong, as any leader's must be, but its manifestations have at times not helped him in his work as President. Even one of his finest points, his genuine love for the College, is at times a detriment to his seeing the full ramifications of problems concerning faculty/presidential relations, or questioning the propriety of continuing the custom (long established before he became President) of inviting selected guests/observers to share part of the annual training cruise. In relation to this matter (guests/observers) the Trustees have developed a cruise observer policy under which all observers will be approved by the Trustees.

The question of leadership is crucial to any institution, none more than for a College. As Trustees we have thought long and hard on this matter and chose to support John F. Aylmer for the indefinite future. President Aylmer has done a number of things very well in his busy and successful life. He has adapted to change before, and if he is to remain as President of Massachusetts Maritime Academy he must do so again.

In a democratic society questioning and attacking leaders in the press and within the organization has become a long established and frequently quite justifiable cottage industry. The leader who cannot stand up to criticism, hold to his or her principles, change style and procedure where appropriate, and ride out the criticism, will go. The true leader will change, both in style and procedure, while holding to the ideas and principles which brought him to his position in the first place.

We believe that President Aylmer understands the above statement. Possibly he will not spend all of the remainder of his working days at the Academy, but for the near future the Trustees believe that the Academy needs him.

Resources Available to Implement Trustee PlansSteps Taken to
Strengthen the
Admissions Office

1. The transfer of Lieutenant Chris Kapp from Counseling and Placement to full-time Admissions Office work starting in September, 1989.
2. The hiring of Mr. Fugi Fulgerace (a minority group member) as Associate Director of Admissions for September, 1989.
3. The hiring of Ms. Lisa Gusmini as a new Admissions Officer in September, 1988, to concentrate upon increasing recruitment and admission of women to the Academy.
4. Assigning 40% of Commander Carolyn Bolling's duty time (she is the College's Affirmative Action Officer) to minority recruitment.
5. Assigning Professor Phillip Connors to visit about sixt central and western Massachusetts high schools during the January - February cruise period.
6. Assigning two members of the Physical Education faculty to student recruitment during the January - February cruise period.

Meeting the Needs
of Proposed New
MajorsSpecific Moves to shift Resources to New Majors

1. Facilities & Plant Engineering Major
 - (a) Program coordinator/engineering professor at a salary up to \$50,000
 - (b) Four part-time instructors to be paid from 03 account at cost of \$20,000 to \$25,000
 - (c) No other shifts immediately needed as laboratories and other facilities are adequate to start major.*
2. Maritime Management Major
 - (a) One MBA faculty member using position currently vacant for Social Science Faculty.
 - (b) No additional cost as library and computer capabilities are adequate for immediate needs.
3. Proposed Maritime Environmental Protection Major
 - (a) One faculty position needed which may be taken from the 21 current unfilled positions campus wide (due to budget reversions & past enrollment declines).
 - (b) Coverage of some essential faculty services through affiliation (formal or informal) with W.H.O.I..
 - (c) Present facilities (laboratories & research vessels) are adequate for this major.

* One special multi-purpose laboratory will be designated for this major program to cost \$96,000 over a three year period.

Summary of Trustees' Position on Academy's Future and Merger Question

1. The Trustees support what a Trustee calls "the concept of unity" seen in the affiliation already existing between Massachusetts Maritime Academy, Woods Hole Oceanographic Institute, and Southeastern Massachusetts University. These institutions share one of the Commonwealth's Centers of Excellence, a Center for Marine Navigation based on the Academy campus. This is an example of unity in which the participants are working to improve higher educational opportunity in Massachusetts, in a consortium in which both public and private entities pool their resources. The Trustees and the Academy welcome such moves.

2. The Trustees agree with the Visiting Team and the Study Team in opposing formal merger with Southeastern Massachusetts University. A merger will not advance the objectives set forth in the Academy's Plan. On page three of its Report the Visiting Team stated -
"... detailed analysis shows that the potential benefits [of merger] would probably be achieved only at an unacceptable educational and financial cost... We do not recommend the merger option."

3. As enrollment rises in the next four or five years from 600 to 800 students the cost per student will drop. One estimate of today's costs show current per-student cost about \$9,300 when the "sea-semester" is factored in. This puts M. M. A.'s costs close to the \$9,000 per engineering student recently estimated by President Brazil of S. M. U..

4. The Trustees approve the Academy's choice of new majors as all of them build upon already existing strengths. We believe these new majors will help recruitment of minority and woman students to which we are fully committed. To us as Trustees the wide ranging study behind the new majors is evidence of faculty and administration willingness to change and grow.

5. The Trustees believe that the economic contribution of the Academy's graduates to the welfare of the Commonwealth of Massachusetts more than justifies its continuance as an autonomous College, not to mention the graduation of thousands of excellent merchant marine and naval officers over the past hundred years.

6. As Trustees we have two requests of the Regents.

First, we urge them to visit the Academy for a day, attend the classes, meet faculty, see the Cadet Regiment, inspect the laboratories, simulators, and training ship. This visit would be mutually helpful.

Second, we strongly request the Regents to grant ten full tuition scholarships for the Academy's use solely for minority students seeking to gain admission to the Academy. Through its Alumni Fund and other trust funds the Academy will supply uniforms, board and room for these new students. We believe in change and diversity of student body, and such assistance from the Regents would greatly help our efforts.



A Report on Plans for the Future of
Massachusetts Maritime Academy

Prepared with the assistance of Administrators, Faculty,
Students, and Trustees for presentation to the Board of
Regents of Higher Education, Commonwealth of Massachusetts

George H. Merriam, Ph.D.
Consultant

November 22, 1989

CONTENTS

<u>ITEM</u>	<u>PAGE</u>
Charge from Regents to Trustees	1
History and Mission of the Academy	2 - 6
Program Diversification	6 - 21
Summary of Action on New Major Programs	21 - 23
Proposal - Maritime Environmental Protection Major	23 - 25
Community Service Programs	25 - 26
Fisheries Program	26 - 28
Non-credit Courses & Lecture Series	28 - 29
Affiliations	29 - 31
Admissions, Enrollment, and Placement	31 - 45
Leadership	45 - 49
Resources for New Activities and Major Programs	49 - 52
Trustee Conclusions on Merger	53 - 58

INDEX

<u>Item</u>	<u>Page</u>
Admissions	31-33, 36-45, 49-50
Affiliations	29-31
Center of Excellence, Marine Navigation	31
NROTC	29
Sea Grant	29
SACHEM	30
Aylmer, John F.	45-49
Commuting Students (Special)	17-18
Community Service Programs	25-26
Dual Licensure (Polyvalant) Proposal	18-19
Enrollment Analysis of M.M. A.	
Compared with other State Institutions	32
Compared with other Maritime Academies	35
Trends in Mass. Engineering Enrollment	36
Women's Enrollment at M. M. A.	36
Facilities & Plant Engineering Major (B.S.)	13-15
Financial Aid Expenditures	43-46
Fisheries Program	26-28
Graduate Program Proposed in Marine Science	20
Leadership Question	45-49
Lecture Series	28-29
Major Programs Studied but not adopted	9-13
B.S. Applied Oceanography	9
B.S. Business Management	9
B.S. Electrical Power Engineering	12-13
B.S. Environmental Engineering	11-12
B.S. Ocean Engineering	10
Maritime Environmental Protection Major (B.S.)	23-25
Maritime Management Major (B.S.)	15-17
Merger, Trustee Statement Concerning	51-56
Minority Student Recruiting	32, 33 37-44
Mission, Massachusetts Maritime Academy	4
Non-credit Courses	28
Placement Information	33-35

INDEX

<u>Item</u>	<u>Page</u>
Polyvalant (Dual Licensure) Proposal	18-19
Proposed Regents' Scholarships	45, 52
Regiment of Cadets	4
Resources for Admissions and New Programs	49-52
Admissions and Recruitment	50-51
Facilities & Plant Engineering Major	51
Maritime Environmental Protection Major	51
Maritime Management Major	51
Special Students (Commuters)	17-18
Women Students, Recruitment of	36-37

On May 30, 1989, the Commonwealth of Massachusetts' Chancellor of Higher Education, Dr. Franklyn G. Jenifer, sent to the Committee on Policy, Planning & Research of the Board of Regents of Higher Education his recommendations on the Southeastern Massachusetts University/Massachusetts Maritime Academy Merger Study Report. Within the two and a half pages of recommendations are a number of comments by the Chancellor concerning the findings of the recently completed Study Team Report and the Report of the Visiting Team which preceded the Study Team Report. This present plan from the academy's Trustees to the Board of Regents results from the charge to the Board of Trustees of the Massachusetts Maritime Academy given on page two of Dr. Jenifer's recommendations.

"... I recommend that the Academy's Board of Trustees submit a detailed plan for the future of the Academy to carry out the changes recommended the Visiting Team Report. Specifically, this plan should include the following: (a) a selective broadening of the mission of the Academy consistent with the recommendations from the Visiting Team; (b) the establishment of an enrollment goal of 800 full-time students over a four year period; (c) a specific plan to recruit a more diversified student body; (d) changes in the leadership of the Academy that the Visiting Team believes are necessary to implement the plan; and (e) reallocation of internal resources required to carry out the plan. In developing this plan the Trustees should give serious consideration as to whether a merger with Southeastern Massachusetts University would accomplish the objectives set forth in the report."

To comply with the above charge by Dr. Jenifer the Trustees of the Massachusetts Maritime Academy submit the following plan for the Academy's future. It begins with a description of where the Academy now is, its already well started moves to broaden its mission, its recognition of the necessity to recruit

a much more diversified student body as a part of a greatly improved and energized recruitment and admissions program. The Report continues with a detailed picture of how resources within the Academy will be reallocated to support the broadening of the mission and the changes in recruitment and admissions. The question of leadership for the Academy is then given full consideration followed by certain additional matters.

The Massachusetts Maritime Academy today is on the verge of celebrating its one hundredth anniversary of continuous operation, an occasion which comes in 1990. It was originally established as a result of state legislation creating the Massachusetts Nautical Training School in 1891. The present name of the Academy was taken in 1942. The Academy was first located in Boston, then in Hyannis, and moved to its present Buzzards Bay site in 1948. In 1946 the Academy was authorized by the Commonwealth of Massachusetts to grant the baccalaureate degree. In 1964 the Academy became a member institution of the Massachusetts State College System governed by a System Board of Trustees appointed by the Governor. Ten years later the Academy was initially accredited by the New England Association of Colleges and Secondary Schools. A major reorganization of the governance structure of public higher education in Massachusetts was effected in 1980 by legislative act. A central governing Board of Regents was created to provide direction and oversight through the individual Boards of Trustees for each of the twenty-nine public colleges and universities within the Commonwealth of Massachusetts.

The primary mission of the Massachusetts Maritime Academy during its first century of operation has been to educate and train young people for professional seagoing careers. Graduates assume full watchkeeping responsibilities as junior deck or engineering officers in ocean-going merchant vessels as they enter the seagoing components of the armed services or are employed in technical positions within a variety of maritime allied and support industries such as shipbuilding or offshore oil exploration. In recent years substantial numbers of graduates have also gone into the electric power industry, working in coal, nuclear, and oil fired plants.

The Federal Department of Transportation's Maritime Administration (MARAD), and the Department of the Navy, provide legal authorization and support for the Academy. The Code of Federal regulations (46 CFR Part 310), identifies Massachusetts Maritime Academy as one of the six State Maritime Academies approved by MARAD to prepare graduates for federal license examination as Third Mate Ocean Vessels, Unlimited Tonnage; and Third Assistant Engineer Steam and Motor Vessels, Unlimited Horse Power. The Academy is professionally accredited by MARAD in accordance with professional curriculum standards monitored by the Office of Maritime Labor and Training of MARAD as directed by section 1304 (f) (1) (B) of the Maritime Education and Training Act of 1980 (Public Law 96-453). Under this act the Department of the Navy identifies Massachusetts Maritime Academy as a college authorized to enroll its cadets in the Merchant Marine Midshipman Program of the United States Naval

Reserves. The Academy's Regiment of Cadets inculcates both discipline and responsibility. At sea a disciplined response is often crucial, just as is accepting responsibility for all assignments. In the undergraduate setting upperclass cadets are responsible for tutorial assistance to Freshmen and Sophomores and for the day to day operation of the Regiment's eight companies. Cadet participation in the Regiment leads to the remarkable success of the Academy's graduates. Active duty Naval personnel are provided by the United States Navy as instructors for the Naval Science Department of the Academy. It is worthy of note that Massachusetts Maritime Academy is second only to the United States Naval Academy at Annapolis in the number of graduates presently serving as active duty admirals.

The educational and maritime training objectives of the Academy within its overall mission as as follows:

To offer men and women of sincere ambition an education that will qualify them for careers in the United States Merchant Marine and associated Maritime* and support industries;

To provide them with an accredited academic background in order that they may be intellectually capable of acting as representatives of the Commonwealth of Massachusetts and the United States throughout the world

To instill in them a sense of honor, leadership, responsibility, and pride in their chosen profession.

* for the purpose of this statement, the word, "maritime" covers the following subcategories: Marine transportation and navigation, fisheries, aquaculture, naval architecture and marine engineering, shipping and port operations, marine law, the history of shipping, off shore mineral and oil explorations and operations, oceanography and hydrography, marine communications, and electronic systems.

To send graduates forth with an abiding respect and affection for the Massachusetts Maritime Academy.

The Academy's mission was broadened to include associated maritime and support industries in 1988 with the submission of the Academy's Five Year Plan to the Regents. The additions to the mission were made to reflect the placement of numerous graduates in recent years in the shipbuilding and offshore oil industries, and in the electric power generating industry.

Financial support of the Academy comes primarily from the Commonwealth of Massachusetts and secondarily from the Maritime Administration of the United States Government. However, it must be stressed that the Academy's operational standards and programs are regulated directly or implicitly by international agreement, by Federal and State Laws, and commercial maritime regulations and practices.

The Academy is recognized throughout the world's maritime community as one of the leading institutes of higher learning for mariners. To keep this position faculty and administrators must be aware of training standards and directions promulgated by the International Maritime Organization (I.M.O) of the United Nations. Academy programs and instructional methods must recognize the changing role of the merchant marine officer in response to the application of modern technology at sea. Compliance is necessary with Federal regulations from MARAD, and the U.S. Navy and Coast Guard

relating to curriculum content, matriculation, shipboard training and sea time, physical qualifications and final assessments of programs and graduates' performance as measured by national professional licensing examinations.

At the same time the Academy's various programs and practices are subject to policies and regulations established from time to time by the Board of Regents for Public higher Education for the Commonwealth. Procedures and general guidelines are established for admissions standards, degree content and requirements, collective bargaining standards for faculty and staff, budget processes and more. The constant challenge to the Academy's faculty and administration is to meet all requirements and regulations while offering students a curriculum that cultivates an understanding of human relations, sound ethical standards, good literary and problem solving skills as well as effective instruction for a high quality maritime technical program.

PROGRAM DIVERSIFICATION at the Academy began in September, 1985, with introduction into the curriculum of the first of four secondary concentrations of study. Building on the strengths of the Academy these secondary concentrations were introduced as indicated below with the distinct purpose of increasing the breadth and appeal of the whole academic program:

<u>Concentration of Study</u>	<u>Date of Introduction</u>
Business Management	September 1985
Mechanical Engineering	September 1985
Marine Fisheries	September 1986
Facilities and Plant Engineering	September 1987

Each of these secondary concentrations consists of eight courses, outlined in this report. The reasons considered in introducing these programs into the college's offerings are as follows:

1. To respond to educational requirements of alternate professional opportunities chosen by graduates during the shipping slump of the mid-eighties.
2. To utilize and develop faculty expertise in new directions that could prove advantageous to students both educationally and in future career choices.
3. To use secondary concentrations of study as indicators of the most effective and compatible directions for the Academy to develop new major programs of study.
4. To provide an outlet for more effective utilization of the professional and academic talents of an extremely versatile and technically competent faculty.

The experience gained via the Secondary Concentration route provides a sound foundation for strategic expansion of the Academy's major offerings while ensuring the high level of educational and instructional quality already established in present major programs.

THE PRESENT AND FUTURE STATUS OF PROGRAM DIVERSIFICATION may be seen in the past two years when a wide variety of new majors have been examined for introduction into the Academy curriculum. To date the major programs listed below have been analyzed and developed to the level indicated. They have either been discarded as being inappropriate to the existing or projected resources of the college or they have been taken to Stage 1 or Stage 2 levels before the Academic and Student Affairs Division of the Board of Regents.

(a) B.S. Applied Oceanography	Stage 2, Regents	On hold pending merger study completion
(b) B.S. Ocean Engineering	President's Ad Hoc Committee	Discarded as unlikely to be successful
(c) B.S. Business Management	President's Ad Hoc Committee	Discarded as duplicative of other instate programs
(d) B.S. Environmental Engineering	Office of the Academic Dean	Discarded as duplicative of other programs in and out of state
(e) B.S. Electrical Power	President's Ad Hoc Committee	Discarded as likely to deplete resources for Plant Engineering B.S.
(f) B.S. Facilities and Plant Engineering	Stage 1, Regents	Stage 2, under development
(g) B.S. Maritime Management	Stage 1, Regents	Stage 2, under development

(a) B.S. Applied Oceanography

This hybrid program was designed to take advantage of existing faculty expertise and marine support laboratory and shipboard facilities to create a major program blending oceanographic education with professional vessel operations training. As will be noted from the Program description, the program was well received by certain marine oriented governmental departments as well as by representatives of marine support industries. Projects such as the Boston Harbor Clean-up Project and the Buzzards Bay Monitoring Project would stand to benefit from the competence of graduates of such a program and a good standard career path is available within the offshore Oil Exploration and Drilling Industries. The program was intended to be taken in connection with preparation necessary to obtain a 1600-ton U.S.C.G. vessel operator's license.

However, the current fiscal difficulties of the Commonwealth and the Chancellor's statement concerning lack of new funding* render this program unrealistic for introduction within the near future--two to three years.

* [excerpt from Chancellor's Recommendations on Merger Study Report, May 30, '89, p. 2.] "The Academy should not expect, given its high FTE cost per student and the present financial difficulties of the State, that additional funds will be recommended by the Board of Regents. Adjustments in the Academy's budget should be consistent with present budget practices rather than for new programs that may be recommended in the implementation of the plan."

Such a program is expensive to operate, requiring three new faculty positions and a minimum investment of \$200,000 in state funds without consideration for shipboard operations. Therefore, it is recommended that the introduction of this program be put on hold and re-examined when the funding situation of the Commonwealth and the College improve.

(b) B.S. Ocean Engineering

An ad hoc faculty committee transmitted an initial report to the Academy's President in March 1986, and a confirmation report in September, 1988, recommending against the introduction of an Ocean Engineering major at this college. One of the primary reasons for not pursuing this particular major is the lack of a satisfactory match between the design engineering orientation of an ocean engineering curriculum and the applied operational engineering emphasis of the Academy's present engineering curriculum

The only circumstance that might conceivably lend itself to the introduction of a major program in Ocean Engineering at MMA would be a substantial resurgence of offshore oil and gas exploration in New England waters. There is presently only a low possibility of such an occurrence. Following a comprehensive survey of fifty-eight offshore drilling companies early in 1987, it became clear that conditions for the near future were not encouraging. Therefore, a reinvestigation of the condition of this industry would certainly be necessary in the future before either a concentration of studies or a major program

could again be considered for introduction into the curriculum. It is not therefore recommended that such programs be developed at this time.

(c) B.S. Business Management

Following the development of a secondary concentration of studies in Business Management, a study group was formed in 1988 to investigate the feasibility of major program in the discipline. However, the committee of four faculty members plus the Director of Admissions were unanimous in their declaration that it was not feasible to establish a business management program with the resources likely to be available. The committee discussed the lack of compatibility of this type of general program with the specific maritime/technical character of the college. They also drew attention to the likelihood of resistance from public colleges in Southeastern Massachusetts with well-founded programs in Business Management. Therefore, there are no plans to develop a general program in Business Management unless directly connected with the needs of maritime industries.

(d) B.S. Environmental Engineering

During early 1988, meetings were held between members of the Academy's leadership and representatives of the Commonwealth's Department of Environmental Quality Engineering to assess the needs of the State for environmental engineers, to identify colleges presently supplying this need, and to determine how the Academy might develop a particular educational emphasis in this area that could prove beneficial to the future

manpower needs of the Commonwealth. It was quickly determined that any general environmental manpower needs could be satisfied by the type of program being contemplated but many colleges within the Commonwealth and surrounding states already offer programs in environmental sciences and engineering. As noted toward the end of this section on Programs, preliminary discussions are underway with the Director at Woods Hole Oceanographic Institute on the feasibility of an affiliation between W.H.O.I. and M.M.A. to initiate a major in Maritime Environmental Protection.

(e) B.S. Electrical Power Engineering

An ad hoc committee was formed in the latter part of 1988 to study the feasibility of a B.S. degree in Electrical Power Engineering. The committee consisted of three faculty members from the Marine Engineering Department (two with Electrical Engineering credentials) and one professor from the Basic Science Department. This particular major program possibility was to be reviewed in light of the fact that some fifty recent graduates are employed within the electrical power generating industry.

The committee felt strongly that such a program could be more effectively offered to students under a general approach such as that of a Facilities and Plant Engineering major as outlines in section (f) which follows. The study group did recommend that a secondary concentration in electrical engineering be considered and such a concentration will be presented to

the All College Committee and appropriate standing committees next fall. It is not recommended that a major program in electrical engineering be instituted in the near future.

f) B.S. Facilities and Plant Engineering

A letter of "Intent to Introduce an Undergraduate Major in Facilities and Plant Engineering" was transmitted to the Vice Chancellor of Academic and Student Affairs on 25 January 1989. The purpose of this program is to build on the instructional experience developed from the concentration program in the same discipline to provide a sound professional preparation in the management and operation of modern industrial plant equipment and facilities.

This B.S. program will run in parallel with the existing marine engineering major having about the same balance of physical sciences, mathematics, humanities, and social science courses. This general education segment will comprise about thirty-five percent (35%) of the curriculum with support courses making up about twenty-five percent (25%) and courses within the major totaling forty percent (40%) of the work for the degree. A detailed program outline is contained in the Stage 2 document prepared in accordance with the standard format established by the Board of Regents.

Massachusetts Maritime Academy has graduated highly qualified marine engineers since 1891. Over the years many have left the sea to work in the operation and management of facilities ashore. An increasing number of shore side positions in facilities engineering and management have become available

in the past five years. Therefore increasing numbers of our students are electing to seek careers immediately after graduation in plant operation and management. Presently there are over forty graduates employed by the Pilgrim and Seabrook power plants in addition to numerous other graduates in power plants in many locations. Over a hundred are employed as engineers at Stone and Webster, one of the largest industrial engineering companies in the Northeast, including the president and three vice presidents of the company.

The objective of this major is to provide a student with a strong foundation in mathematics, science, and engineering with extensive exposure to the operation and maintenance of plant/facilities machinery. All but five of the courses necessary for the proposed major are presently offered as required courses for the Marine Engineering degree or as part of the Facilities and Plant Management Secondary Concentration of Studies. The additional five required courses will be developed on campus. Two additional appropriately experienced and qualified faculty members should be required--one in the first year of implementation and one in the second year after implementation.

The Facilities and Plant Management major will include all the required courses in mathematics, physical sciences, humanities, social sciences, and engineering presently offered as well as courses in accounting, instruments and controls, organizational management, building construction, heating, ventilation and air conditioning, construction estimating,

supervisory management, maintenance control, and energy management. Where necessary modifications will be made in the appropriate engineering courses to address the operational differences between engineering plants afloat and ashore.

It is certain that graduates from the major will continue to secure jobs such as insurance company loss control engineers, power plant operators, state and federal inspectors, and production plant managers. We anticipate that this program will attract students from every part of the Commonwealth because of its diverse curriculum and hands-on training. Presently there are not colleges or universities in the country offering such a degree.

In general the administration, faculty, and staff at the Academy believe that this major offers the highest probability for recruiting additional students as well as operational success in that it would appear to be the new major proposal most closely aligned to the character of the Academy and the expertise of the faculty.

(g) B.S. Maritime Management

With guidance from the MMA/SMU Merger Study Reports and the Chancellor's accompanying remarks, a letter of "Intent to Introduce an Undergraduate Major in Maritime Management" was transmitted to the Vice Chancellor for Academic and Student Affairs on July 10, 1989. The purpose of this program is to build on the instructional experience gained from operating a

concentration program in business management over the past four years and to offer a program with a maritime component likely to appeal to a more diversified student body.

The Academy's Placement Office research indicates that recent innovations within the marine transportation industry and associated trucking and rail industries have resulted in expanded employment opportunities for lower level managers and administrators. Graduates with a general maritime and management background and an elementary knowledge of computer applications may quickly assume positions as steamship agents, cargo terminal operators, traffic administrators, freight trackers, intermodal freight forwarders, and cargo brokers. The major as proposed will also allow graduates to become yacht brokers, marina managers or marine hardware retailers/wholesalers or to enter the shore side processing and marketing segments of the fishing industry in a wide variety of positions.

In short, there appears to be a substantial set of career opportunities for graduates having a broad business management background with a specific maritime bias and a firm foundation of computer skills. Many graduates of existing majors at this college find their way to similar positions such as those mentioned above and return to college to obtain the necessary business and computer courses to complement their maritime oriented skills and education.

All but two of the courses necessary for the proposed major program in maritime management are presently offered as

required or elective courses within existing majors or as component courses within a secondary concentration in business management. All of the core courses in mathematics and computer science are now offered by our Basic Sciences Department. All of the specialized courses in accounting, management, economics, business, and finance are presently offered by the Social Science Department as required under the Business Management Concentration or as elective courses.

A course will be developed to cover "Microcomputer Applications for Business" as well as a course in "Principles of Marketing." An additional faculty member with business management credentials and experience will be necessary for the start of the third semester of the program.

It is intended that the proposed major be developed with substantial consideration for the Regents' directives to the Academy to diversify its mission so that it serves a broader cross section of the populace and becomes more cost effective as a result of such diversification. Students entering this major will be given the option of living on campus and becoming involved in the regimental aspects of cadet life or attending the Academy on a commuter basis with no regimental or paramilitary involvement.

ADDITIONAL PROGRAM CONSIDERATIONS TO IMPROVE DIVERSIFICATION OF THE ACADEMY'S STUDENT BODY AND ENHANCE STUDENT RECRUITMENT began with the addition of commuter student to the campus this fall semester of 1989. Currently the Academy has open registration in about twenty courses to daytime commuter

students on a "space available" basis. A wide range of potentially popular courses are offered including Algebra, Chemistry, Physics, English Composition and Literature, Introduction to Marine Transportation and Introduction to Marine Engineering as well as several elective courses ranging from Fisheries Ichthyology to Organizational Management.

The current commuter students, 23 in number, taking a total of 59 courses, are categorized at present as Special Students and allowed to take up to thirty academic credits prior to declaring a major. This type of flexible approach is intended to allow improved access to both standard and specialized courses on the part of a broad spectrum of the population within thirty or more miles of the Academy. Further, it is hoped that this initial exposure to the academic programs of the Academy will result in an eventual decision to pursue a major program at the Academy by a significant number of commuter students. This new avenue for admission to the Academy is a substantial change in policy designed to improve access and broaden the appeal of the Academy to a much wider potential student constituency.

Another proposal of significance is the one to offer a dual Marine Engineering/Marine Transportation B.S. program leading to licensure as both Third Mate and Third Assistant Engineer. Such a program is designed to meet a worldwide trend in the world's major merchant fleets towards the employment of dual-purpose (Polyvalent) officers. The program will provide junior officers to industry capable of performing the functions

of deck and engine watch keepers before making a choice of future advancement to senior positions in either department but with an enlightened professional capacity for total ship operation and management.

There are three purposes of the dual degree/dual licensure program:

1. Officers will be provided to industry better educated and trained to adjust to the constantly evolving applications of high technology as well as having a better grasp of the overall operating and management needs of both the shop and shipping company. The graduates will possess the capability to choose two career paths within the same industry rather than being confined only to the deck or engine paths.
2. Recruitment competition is extremely keen between the three East Coast maritime colleges of Maine, New York, and Massachusetts. It is believed that such a program may give this College the edge in attracting some of the brighter students in the Northeast.
3. Qualified graduates from such a program will be in an excellent position to assume polyvalent officer berths in the future. These individuals will also be more appropriately educated for careers as naval line officers.

Clearly the versatility created by such a professionally oriented program will provide an additional positive factor for recruiting in an extremely competitive field by keeping the Academy on the leading edge of maritime higher education.

POSSIBILITY OF A FUTURE GRADUATE PROGRAM IN MARINE SCIENCE which grew out of a 1986 favorable report on such a program from a study group of Academy faculty and administrators assisted by experts from Tufts, M.I.T. and the National Sea Grant Office is at present completely on hold. As a result of this initial encouragement, the Academy's Academic Dean developed a program structure during 1988. A letter of "Intent to Plan" a graduate Program in Marine Studies was sent to the Vice Chancellor for Academic and Student Affairs on January 29, 1989. On the same day a memorandum was delivered to the Chairman of the All College Committee to begin internal proceedings and discussion necessary to introduce such a program. The resulting analysis and discussion within the All College Committee brought the recommendation that although the program may have merit at a future time, the undergraduate enrollment problems currently facing the Academy deserve our full attention. A sound graduate program at this institution must be built upon a solid undergraduate base. Our first priority is to develop an attractive and academically viable curriculum toward which all available resources should be directed.

At a later date, with improved undergraduate enrollment and a brighter funding situation, it is hoped that realistic

reconsideration of this graduate program will occur. Please see for full description of this program.

SUMMARY OF ACTION FOR SELECTIVE BROADENING OF THE MISSION. As this report clearly indicates, the entire spectrum of academic offerings at the Academy have been critically analyzed over the past four years with the goal of adding to the variety and appeal of programs in order to significantly improve and diversity enrollment.

Seven undergraduate majors were examined for possible introduction. In each case consideration was given to the ability of the faculty to conduct such a program, the possible duplication of other programs in the region, the possibilities of funding, and preservation of the character and mission of the College. Four secondary concentrations of study have been successfully assimilated into the academic program as student interest indicated and institutional capability to satisfactorily conduct them existed. Appropriate industrial, academic, and governmental advice and guidance were sought to assure the proper academic and professional content of the programs and the potential employability of future graduates.

Following this period of intense introspection, it was concluded that the Academy shall double its major offering from two to four by adding B. S. programs in Facilities and plant Engineering and Maritime Management. The former program parallels the existing B.S. in Marine Engineering with focus on the elements necessary for shore side rather than seagoing engineering systems operation while the latter program building

on a concentration program in business management with potential appeal to a greater portion of the general population. The added programs break with the Academy's traditional modus operandi by allowing student the choice of entering the Regiment of Cadets or attending as commuter students.

In addition, a Dual Major/Dual Licensure program (Polyvalent) will be added to keep the Academy in its rightful position as a leader in maritime higher education worldwide. Furthermore, beginning in the fall semester 1989, selected course offerings were opened to "Special" commuter students up to a total of thirty academic credits.

As Trustees we were generally aware of the decline in high school enrollments over the past decade (an actual decline of more than 40% from 1980 to 1992). We also understood that all colleges of engineering and technology were having difficulty in meeting enrollment targets. However, not until the Academy's Dean Geoffrey Motte called our attention to a recent report.* (published this year by Sigma XI, the Scientific Research Society) on the nature and quality of undergraduate education in science, mathematics, and engineering did we comprehend the scope of our national problem, and how it related to Massachusetts Maritime Academy. Among the findings noted in the report were the following:

"Freshman interest in fundamental undergraduate science majors has dropped dramatically, by almost half, over the past twenty-three years"

* An Exploration of the Nature and Quality of Undergraduate Education in Science, Mathematics and Engineering. A Report by the National Advisory Group of Sigma Xi of a meeting at Wingspread in Racine, Wisconsin, January 23-26, 1989.

Freshman interest in technology careers has experienced a dramatic decline in just the past six years. Between 1982 and 1988, the proportion of freshmen planning to [become]. . . engineers fell by almost on quarter, the proportion of freshmen planning to pursue courses as computer professionals has plummeted, falling by nearly three-fourths in just six years."

[Of the tens of thousands of able students annually entering college to pursue science majors] '. . . more than half of these students change their mind for other, non-science fields.'"

Other findings include strong critical comments on the quality of instruction in science and engineering which quality at many of the institutions is less than helpful, and appears to be among the significant factors turning young men and women away from careers in science and technology. Further, the Sigma Xi National Advisory Group strongly criticized science, engineering, and technology majors as a curriculum group for having too much rigidity as far as allowing students to shift from one field to another. In view of the above statements and criticisms, some of which touch the Academy directly, and others (as in the case of teaching) which makes up proud of the faculty at the Academy, we hope to move the Academy to be more responsive to potential student demands for more varied opportunities in the general area of maritime careers.

In the immediate future we, the Trustees, will urge the Academy's faculty and administration to push for an additional major (besides the two already noted--Facilities and Plant Engineering and Maritime Management) tentatively titled Maritime Environmental Protection. This major grows out of three factors. First the already prepared and currently deferred B.S.

in Applied Oceanography; second, the recent interest shown in several quarters on and off campus in attempting to establish a Criminal Justice program at the Academy; third, the remarkable proposals recent made to the Chairman of the Board of Trustees by new Trustee Dr. Craig Dorman, Director of Woods Hole Oceanographic Institute.

Obviously, in an age of increasing environmental degradation and equally increasing attempts by local, state, national and international agencies to avoid such disaster, great need exists for intelligent enforcement of laws and regulations designed to protect the environment. Dr. Dorman in a very thoughtful letter points out that

"First, there is a growing need for qualified and knowledgeable maritime regulators and enforcement officers. Coastal environmental quality laws, boating safety and speed control, Coast Guard support activities, and drug control, not to mention normal policing functions, all demand knowledgeable, capable, marine oriented well educated professionals.

"Additional marine oriented regulations and controls at city, county, regional, and even international levels are inevitable. There is virtually no training ground for the people who will be needed to rationally deal with the impending legislation. Wise development and application of marine law requires an appreciation for physical, biological, and chemical oceanic processes; a basic knowledge of the principles and practice of law at various levels; and training in the techniques and psychology of enforcement and regulation. There is, and will be, a huge if not yet recognized demand for the product of such a program (which does not, to my knowledge, yet exist anywhere). With an adequate body of experienced regulators, incidentally, the wheels of government would run more smoothly; we would not have to wait as long as we do for an enlightened decision on a request to repair a dock or construct a breakwater, for instance. And the possibilities for state revenue generation from enlightened, rapid regulatory action are excellent.

"A program in marine law enforcement is fully compatible with a paramilitary life. It involves many of the elements of life at sea already taught [by the Academy]--not therefore, requiring a major staff expansion. In fact, I think you could manage just by filling the [currently] vacant professorial positions. The graduates would not only be readily employable within their major discipline, but would also provide an augmentation source for current law enforcement programs (and thus state, county and local police forces). But with the addition of a maritime slant, MMA's program would be a national leader and not just another program to compete with or add to extant civil jurisprudence training."

Much of the necessary preparation for such a program is already completed for the development of the Applied Oceanography major. With the substitution of six or seven semester long courses in environmental affairs, laws, regulations and enforcement mechanisms (including a practicum) the Maritime Environmental Protection major could be ready to move through the approval process of the Board of Regents. As Trustees, we believe that this new major will attract students interested in protecting the maritime environment and be of real service to the Commonwealth.

Two other areas must be considered for the present and future success of the Academy. These are community service programs, and affiliations with other institutions of higher education.

Massachusetts Maritime Academy has enjoyed excellent town and gown relations for years, which is to a considerable degree a reflection of the work done in this area by the Academy's President. Whether the activity is the Cape Cod summer baseball ten team league (whose Bourne team uses the Academy field in

season) or the local Boy Scouts and retired people who use the Academy's swimming pool, or the use of the College gymnasium for graduation exercises by upper Cape high schools including Plymouth/Carver Regional High School or the use of the dormitories and other facilities for summer sports instruction programs in baseball, football, volley ball, and gymnastics (a program serving hundreds of the state's taxpayers and returning a small profit to the College's Foundation) or the availability of campus facilities for conferences such as one recently on Environmental Education or another for the local Alliance Against Drugs, the Academy is pleased to have its facilities used as much as possible and as Trustees we want this continued.

Still looking toward the future the Trustees strongly suggest that more be attempted with programs such as the one for minority youth interested in maritime careers which has been presented in two of the past three years in connection with the Fisheries Program of the Academy. We believe such a program is very appropriate and must continue, and, if possible, grow.

SPECIAL ACTIVITIES

The marine oriented industries of the Commonwealth look to the Academy for the specialized technical and professional education and training that is all important to the economic well being of their particular enterprise. Commercial fishing alone accounts for about one billion dollars of the State's economy and the pleasure boat industry involves a large number of Massachusetts residents from either a business or recreational viewpoint.

In 1976, the Academy entered into a joint education program sponsored by the Massachusetts Institute of Technology Sea Grant Program in order to develop a commercial fisheries sequence of lectures and workshops for local fishermen. These efforts were recognized in 1978, when the Commonwealth approved an Act designating the Academy as the site for the state's Marine Fisheries Training Center.

The overall objective of the Fisheries Program at Massachusetts Maritime Academy is to facilitate development of the commercial fishing and recreational fishing and boating industries in the Commonwealth through education, research and demonstration programs. The primary goal of the Fisheries Education Center is to provide fishermen, boat operators and cadets with the best possible fisheries and small boat training programs available. Program costs to students are low since they are subsidized by both federal and state grants. Over 1400 fishermen and boat operators were served by 65 specialized seminars and workshops during the past year. Topics covered include: diesel and outboard engines, electronic aids to navigation, radar applications, fire-fighting techniques, fish detection, fishing methods, net design and repair, cold water survival, business management and other aspects of fishing and boat operations that are potentially useful to commercial and recreational boaters.

The Fisheries Program operates the 68-foot research vessel EDGERTON, which is equipped with a complete array of electronic navigational aids, and fish detection devices,

oceanographic equipment and fishing gear. The vessel is used for instructional purposes and for research projects. The vessel is also available for chartering and conducting demonstrations such as the correct application of marine safety and fire-fighting equipment.

The Academy is recognized by the United States Coast Guard as one of only two colleges in New England authorized to train, examine and issue certificates to licensed merchant marine officers for competency in radar techniques and navigation. These courses are available to serving officers every other weekend--165 officers received certificates for either initial licensing or relicensing as radar observers during this year.

An Evening And Summer Extension Program is also offered in conjunction with Bridgewater State College resulting in about 8-10 credit bearing courses ranging from Computer Science and Calculus to Contract Law and Philosophy.

Additionally, the Community Affairs Department offers several noncredit special interest courses during the evening hours. These courses are by popular demand covering such topics as: Power Plant Engineering, Scuba Diving, Welding and Burning, Real Estate Licensing, Small Business Operations, Mixology, and Celestial Navigation. Over 400 people attended these courses during the past year.

For the past three years, the Academy has expanded the scope of its annual Distinguished Visiting Lecturer Series under the patronage of past Chairman of the Board of Trustees, Edward Novakoff. The intent of the lecture series is to offer to cadets

and the general public a broad range of topical lectures that follow a general interest marine theme and attract to the college lecturers of national and international repute.

This year's theme was Maritime History incorporating the following lectures; attended by a total of approximately 200 people.

1. "Lorenzo Dow Baker; Yankee Entrepreneur in the Caribbean Fruit Trade. Origins of United Fruit Line," Speaker: Professor Randolph Bartlett
2. "North Atlantic Passenger Service in the Age of Steel and Steam," Speaker: Professor Lester J. Bartson
3. "Cunard versus Collins: the Realities of a North Atlantic Seamanship Rivalry," Speaker; Dr. Edward W. Sloane, III

AFFILIATIONS

Just as the Academy is deeply involved with citizens of its immediate local community and the larger Commonwealth, so also it is pleased to join, or affiliate if that is a more appropriate term, with a number of other educational institutions and groups.

For example, cadets are able to participate in Naval Reserve Officers Training (NROTC) through the Academy's affiliation with the NROTC unit at Boston University.

An important affiliation exists with M.I.T. through the Sea Grant program, not only for the Fisheries Education program mentioned above, but also for a grant to the Academy to help support the two week minority (9th grade) student experience introducing such students to marine science.

An organization with which MMA has been affiliated for some fifteen years, the Southeastern Association for Cooperation in Higher Education in Massachusetts, usually known as SACHEM, has been a disappointment. Founded with considerable hope and fanfare in 1974, with a membership including Bridgewater State College, Bristol Community College, Cape Cod Community College, Dean Junior College, Massachusetts Maritime Academy, Massasoit Community College, Southeastern Massachusetts University, Stonehill College, and Swain School of Design, the anticipation far outran the actuality. Perhaps the wide geographic distances between some of the members, the absence of an individual whose full time work was to lead the consortium, possibly the very marked differences in purpose between some of the different members, all worked to make SACHEM relatively ineffective. Its two major achievements, an annual lecture series in which member institutions each provided one or more faculty members for lectures on other members campuses, and cross registration of courses by students within the consortium, were moves in the right direction, but never really developed.

The Trustees want the Academy's membership in SACHEM maintained. We note that President Aylmer has been steady in his attendance and support for the group, and members of the Academy's faculty have been willing participants in past lecture series. SACHEM still exists, and may some day prove extremely valuable to the region.

An affiliation which the Trustees welcome and hope to see grow puts Southeastern Massachusetts University, Massachusetts Maritime Academy, and Woods Hole Oceanographic Institute together behind one of the Commonwealth's recently organized Centers of Excellence. One of the goals of this new Center is to establish a center for Marine Navigation at MMA aimed at using the most recent and sophisticated electronic means of carrying forward such navigational study. The Trustees find this new affiliation between the three different institutions promising and exciting, and will do whatever possible to encourage it.

It is believed that all of these measures for broadening the mission of the Academy can be initiated within the Chancellor's guidelines of confinement to "present budget practices" with resulting return to the Academy's designed enrollment of 800 within five years from acceptance of the plan.

ADMISSIONS AND ENROLLMENT

From a consideration of new majors developed and developing in recent years designed to broaden the curriculum, we move to the immediate need for more diversity in the Academy's student body. For many years the majority of the Academy's students came from Massachusetts public and parochial high schools. In the past many of the men entering each year's 4th Class (Freshman) were legacies from families with close alumni ties to the Academy. Others came from families who summered on Cape Cod or the Islands or were young men who had been raised in coastal backgrounds leading to a maritime interest.

While the pattern began to change some years ago with the admission of women to the Cadet Corps, it has not changed dramatically as far as minority students are concerned.

To understand the current situation one must examine enrollment and admissions statistics for the past few years, some directly from the Academy, others with a wider scope. First we consider total enrollment statistics for the period 1978 to 1987 to compare Massachusetts Maritime Academy with other Massachusetts public colleges and universities.

MASSACHUSETTS MARITIME ACADEMY

Comparative Enrollment Analysis

	<u>1978</u>	<u>1980</u>	<u>1982</u>	<u>1984</u>	<u>1986</u>	<u>1987</u>	<u>1989</u>
Total MMA Enrollment	886	930	839	803	649	602	601
MMA % Minority	1.4	1.2	0.6	1.8	1.4	2.3	3.1
State College Average % Minority	2.6	2.6	3.3	2.8	3.5	3.7	NA*
System Average %	5.0	5.4	6.5	7.5	8.8	9.4	NA
MMA % Female	1.2	3.9	6.6	6.2	3.9	3.2	5.3
State College Average % Female	59.6	60.8	59.2	58.2	60.7	61.8	NA
System Average % Female	53.1	55.2	54.9	54.9	56.6	57.4	NA

*Statistics not available at this time.

SOURCE: Hegis Iped, Board of Regents

Why have the percentages of minority students at Massachusetts Maritime Academy been so different from those of the rest of the public higher education community in Massachusetts? To fully understand what the numbers mean one has to recognize that the Academy student body has been and still is essentially a white, male population, serving until recently an industry which was almost entirely white, and male, in the description of its workers. That leads us to a consideration of recent Placement, which in turn will bring us back to Admissions at the Academy.

Stated so many times that it is now a cliché, recent United State maritime employment has been up, down, up roller coaster fashion over the past decade. Those moves coincide with a reduction in the number of ocean going vessels in the U.S. Flag fleet from 900 about a decade ago to near 429 today. Over the same period individual ship tonnage has increased, and the size of crews decreased. Ten years ago there were 34,000 sea going billets for which 69,000 Americans competed. Today there are less than 29,000 U. S. merchant seamen available for only 11,000 billets.*

Until recently this decline in use of U.S. Flag merchant vessels in international trade continued (only about 4% of U.S. exports are now carried in American vessels), but in the past year or two conditions stabilized and demand for Academy graduates has greatly increased due to the imminent retirement of both seamen and experienced officers. The shortage of sea going work has ended for the time being. Now, according to Captain

Albert Wilson, Director of Placement at the Academy, jobs for graduates both on and off shore exist in abundance and his office is experiencing a marked increase in visits of company recruiters. There has always existed strong demand for MMA graduates, but it has grown away from maritime work over the past four years as the list below indicates. This is a small sample of the total number of companies hiring graduates over the past four years.

*First Report of the Commission on Merchant Marine and Defense, September, 1987, p. 12.

Atlantic Valve	Gillette	New England Aquarium
Boston Edison	Gould Pumps	New England Electric
Boston Hous. Auth	Hollingsworth & Vose	New England Telephone
Columbia University	Ingalls Shipyard	Newport News Shipbuild
Combustion Engineering	International Paper	Norfolk Naval Shipyard
Defence Mapping Agency	Kemper Insurance	Northeast Utilities
General Dynamics Electric Boat Division	Massport	Northrup Company
General Electric	Massachusetts Water Resource Authority	Portsmouth Naval Shipyard

To recruit young men and women including minority students from the steadily declining pool of high school graduates has been difficult in recent years for all State Maritime Academies, as indicated below:

State Maritime Academy Enrollments

State Academy	<u>83/84</u>	<u>84/85</u>	<u>85/86</u>	<u>86/87</u>	<u>87/88</u>	<u>88/89</u>	<u>Percent Change</u>
California	496	456	418	367	356	375	-24%
Great Lakes	176	116	83	56	56	59	-66%
Maine	659	624	493	422	440	484	-27%
Massachusetts	858	803	743	650	575	601	-30%
New York	942	900	790	749	746	702	-25%

Texas totals are not given because enrollment data included student enrolled in both License and Non-License Options and were therefore not comparable. From 1983 to 1988 Texas' Corps of Cadets dropped 45% and civilian enrollment increased 74%.

Without intending to minimize any of the Academy's weaknesses until recently in recruiting all students, including minorities and women, it is significant that overall enrollments at selected engineering schools in Massachusetts have also suffered declines over the last five years as the table below indicates:

Trends in Engineering Enrollments at
Selected Massachusetts Institutions:

Undergraduate Full-time Engineering or
Computer Science Enrollments

(Total Sophomore, Juniors and Seniors
in Largest Engineering Disciplines)

<u>Institution</u>	<u>85-86</u>	<u>86-87</u>	<u>87-88</u>	<u>88-89</u>	<u>% Change</u>
Boston Univ.	1484	1443	1351	1314	-11.5
Mass. Maritime Academy	743	650	575	601	-19.1
M.I.T.	2181	2126	1985	1914	-12.3
Northeastern	3757	3500	2994	2579	-31.4
SMU	983	950	860	803	-18.4
Tufts	545	486	486	486	-10.8
UMass-Amherst	1493	1443	1387	1219	-18.4
Univ. Lowell	2272	1956	1496	1482	-34.8
Worc. Polytech	1550	1554	1524	1268	-18.2

SOURCE: Boston Globe - Article by Ronald Rosenberg,
SMU data from L. Bryce Anderson, Dean, SMU College of
Engineering

In recruiting women students for the Academy the past five years have produced a mixed record, as shown below:

	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>
Applied	32 (7%)	27 (6%)	23 (5.9%)	22 (5.6%)	28 (8.3%)
Enrolled	14 (8.5%)	5 (2.4%)	7 (3.6%)	7 (3.7%)	18 (9.7%)

However, the positive trend is very clear. From 1988 to 1989 the number of women applicants increased more than 27% and the number of women who enrolled increased 23%. The proportion of women in the 4th Class (Freshman) jumped from 3.7 in 1988 to nearly 10% of the 1989 4th Class. Such movement is very positive, encouraging the Academy's academic administration to believe it may now be able to set annual goals of enrolling at

least ten percent women in each 4th Class in future years. This year's increase owes much to the coming of Ms. Lisa Gusmini (an alumna of the Academy) into the Admissions Office. She worked steadily to make sure that every woman applicant was quickly followed up, keeping in touch with them, and following them through to the day of their arrival on campus. Here is proof that such gains may be made even in a very difficult and competitive admissions situation. There are now thirty-three women in the Cadet Corps.

To help increase the total size of the student body in September, 1990, during the present year a representative of Massachusetts Maritime Academy will visit every high school in Massachusetts. Visitors will include members of the Admissions staff; faculty members like Professor Phillip Connors who during the January-February Cruise period will visit about sixty schools in central and western Massachusetts; alumni who sometimes join representatives from the Academy at college nights or in making school visits; and some one hundred and twenty-four cadets scheduled to visit their own high schools this fall. Two members of the Physical Education Department are also being assigned to visit schools during the cruise period.

As regards the admission of minority students, the record still has to be greatly improved in spite of considerable changes over the past year. A minority group member has been appointed Associate Director of Admissions, and the services of Carolyn Bolling, the Academy's Affirmative Action Officer, have

been assigned to the Admissions Office for two days a week for minority recruiting. She reports interest on the part of many prospective students, while also noting that able black senior high school students have many offers of financial aid in addition to admission at very prestigious private colleges and universities.

Recruiting women and minority students for colleges specializing in engineering and technology is especially difficult, as minority and women engineering majors historically have been very limited in number. Except for the Asian component of the minority community large numbers of the other minority groups tend to drop out of mathematics and science courses early in high school unless they have a strong interest or career direction demanding such study. Nationally there is a limited number of women and minority members in engineering, and far smaller numbers in maritime occupations. Unfortunately, it is not uncommon for high schools with substantial minority student bodies to have fewer boys and girls in mathematics and science, and, equally unfortunate, counselling of students is uneven in quality. Finally, and most regrettable, though a growing number of black students are completing high school, the percentage of black men and women going on to college is dropping. According to the American Council on Education, in 1985 only 26% of black high school graduates went on to college compared to 34% in 1976, a year when the percentage of the blacks population entering college was slightly higher than the percentage of the white population. Minority enrollments have climbed in the U.S.A.,

but the gains thus far have come from increasing numbers of Hispanic and Asian/Pacific Island students.

To summarize

1. Many high schools fail to fully meet the academic needs of minority students, thus hindering their college preparation.
2. In many inner city neighborhoods, family patterns and cultural barriers exist which make it difficult for minority students to consider college as a valid option.
3. Many otherwise potential admissions candidates from any minority group decide against college purely on economic grounds. Tuition and other costs are just too high.
4. Financial aid has shifted somewhat from grants to loans, which especially affects the opportunities for minority candidates.

The Board of Regents' Reports on minority applicants at Massachusetts Maritime Academy for the past five years show some examples of trends. Note the rise in the number of Asian/Pacific Islanders and Hispanics and the steady decline in the number of black applicants.

Minority Applicants at M.M.A.

<u>Minority Group</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>
Asian/Pacific Islander	7	10	11	7	14
Blacks	18	19	15	14	11
Hispanics	18	19	16	18	16
Other (inc. Native Amer.)	16	12	9	10	6
Unknown	<u>0</u>	<u>10</u>	<u>4</u>	<u>5</u>	<u>2</u>
% of Total Applicants	12%	17%	15.5%	15%	15.5%

The Faculty, Trustees, and Administration recognize the need to increase the size of the Academy's student body from 600 to 800 over the next four to five years, and we understand the need for more minority representation in the student body. As Trustees we are determined to work until both goals are accomplished, and we believe the same is true of Administration and Faculty. We make this statement being fully aware that at the moment, nationally, minorities and women collectively represent less than one percent of the labor force in the U. S. maritime industry. An examination of the Admissions Strategy Report will indicate some of the efforts being make this year to attract and hold the best minority candidates possible while also working to build the size of the next entering class. The College has added minority Admissions Officers, we have minority cadets where possible visiting high schools, invitational days largely devoted to minority students for campus visits, and are paying more attention to high schools with large minority populations.

During the current semester the 36 high schools in Massachusetts with the largest minority student enrollment were targeted for special attention and 32 of them already have been visited. Among these schools are Boston English and Boston Latin, Matignon, West Roxbury, Lowell (with the most Vietnamese students in the State), Brockton, Worcester South, and Springfield Classical. When visiting schools, the admission staff or trained student volunteers stress the excellent job opportunities available to Academy graduates, meet with Guidance

counselors to explain the tutorial help available to minority students and encourage interested students to visit the campus.

The Associate Director of Admissions attended two workshops in October/November for minority educators. One was held at Framingham State College, the other in Springfield. Chancellor Jenifer spoke at both workshops on the topic of minority access to higher education. He also stressed the need to do more to attract the AHANA (African Hispanic Asian Native American) student to our colleges.

Three campus "open house days" were run this fall, in September (120 students and parents), October (165 students and parents), November (175 students and parents). An invitational day on December 14 will host about forty minority students from South Boston High School. These members of the Naval Junior ROTC will visit the Academy and have a chance to meet representatives from the Navy and Coast Guard as part of the day's happenings.

The Admissions staff is active in attending College Nights and Fairs. The Director went to Fairs in Philadelphia and Chicago. At the first Fair twenty-eight written inquiries resulted, from the second twenty-four were obtained. Chicago had 7,000 students (80% minority), and Philadelphia served 8,000 (60% minority).

Closer to home the Associate Director has attended College Fairs in Bridgeport (heavily minority), Harvard

University (again very substantial minority attendance), and New Bedford. The Trustees are pleased that the admissions personnel have also worked where others may not wish to go, as in the case of the recent Boston Technical High School College Night, where 125 Colleges were invited and only 15 representatives attended, or a similar night in Chelsea, where almost identical proportions of invitations and acceptances prevailed. We are pleased to see these efforts.

Once a minority student is admitted and on campus he or she will find much assistance, especially in the form of tutoring which if required can be available daily. It is the belief of the Trustees, Administration, and Faculty that once a substantial number of minority students are on campus, and are made comfortable socially and academically, recruitment, though always challenging, will not be so difficult.

Already the Trustees find that promise exists in the Academy's summer program for able 9th grade minority students from South Boston High School. This past summer, for the third year, the program ran for two weeks in July. Thirty-two girls and twenty boys participated in the two one-week sessions. Students were given an introduction to marine science techniques in classroom, laboratory, and on field trips. They were taken out to sea on the Academy's research vessel Edgerton and on one of

the Academy's sailboats. Quite a few of the students attending the program during the past three summers have not had a chance to learn to swim, and the Academy's pool was used by all. The Admissions Office staff intends to keep in touch with the young people so that they are aware of the Academy as an option if they become interested in any of our programs. The Academy's connection with South Boston High School through the Summer Program for Minority Students has resulted in one of our faculty members, John J. Callahan (Associate Professor of Mathematics and a co-director of the Program) becoming a member of the Marine and Environmental Science Advisory Board of South Boston High School.

The Trustees find a steady record of financial aid for minority students. Already for the first semester of the academic year 1989-1990, Commander Mary L. Norton, Financial Aid Officer, reports \$41,840 has been granted with more to come in the second semester. This compares to \$54,517 for the academic year 1988-1989; \$46,510 in academic year 1987-1988; and \$34,464 in 1986-1987.

A comparison of aid to minority students related to the total amount of aid available in any year from all sources is shown in the chart which follows:

Financial Aid Expenditures

<u>PROGRAM</u>	<u>1986-87</u>	<u>1987-88</u>	<u>1988-89</u>	Awards to Date <u>1989-90</u>
Pell Grant	89,090	78,450	118,670	100,293
Supplemental Educational Opportunity Grant	63,430	63,430	60,120	63,000
Perkins Loan (National Direct Student Loan)	21,350	76,625	71,900	98,050
College Work Study	62,416	48,079	43,100	73,050
Stafford Loan Program (Guaranteed Student Loan)	467,257	114,871	45,709	8,656
Bd. Regents Tuition Waiver	52,172	49,820	50,160	43,926
Except. Talent Tuition Waiver	8,767	8,407	8,409	0
MMA Scholarships (Presidential and Scholarship Funds administered by Scholarship Committee)	<u>78,059</u>	<u>87,033</u>	<u>93,179</u>	<u>100,739</u>
Total	842,541	526,715	491,247	487,714
Portion of Aid granted Minority Students Annually	34,464	46,510	54,517	41,840*
Percent of Total	4%	9%	11%	

*Amount Granted up to 10/28/89, more to be granted second semester.

When the annual aid to minority students is compared with the total amount, one sees a steady rise in annual percent granted, a rise which will certainly be continued when the second semester additional grants are made this year.

The Trustees are extremely aware of the need to increase the size and diversity of the Academy's student body. We believe that the increases in the Admissions Office staff, the expanded school visiting program and the on-campus invitational days, the summer program for gifted 9th grade minority students [which must somehow continue to be funded] and, most of all, the attraction of the new majors which should be available in September, 1990, will greatly help. We find a strong awareness on campus of the necessity for this additional effort and will monitor it carefully in the months ahead.

As Trustees we are pleased to see the increase. More help is needed and with the encouragement of the Academy's leadership we are asking the Board of Regents to make available ten dedicated full tuition grants only for minority students which the Academy will match with board, room, and expense grants from its trust funds.

LEADERSHIP

The Board of Trustees of Massachusetts Maritime Academy is truly concerned about the leadership of the College. We want the best person we can find for the Academy's presidency. Leadership has many faces, it comes in a democracy from a variety of people, and the mantle of leadership peacefully shifts at times from one person to another. Different kinds of

leadership are recognized, from the nearly absolute power given to a captain of a ship, to the leadership of a political body, or the leadership of an academic institution.

The Trustees of Massachusetts Maritime Academy know that there are many different styles of leadership in colleges and universities. These include the authoritarian, the collegial, the diplomat/politician, the scholar among scholars (obviously similar to the collegial style). We believe that the needs of a given college at a given time determine the nature and style of presidential leadership.

More than eight years ago, upon the death of President Lee Harrington, John F. Aylmer was chosen as President of the Academy. A graduate of Massachusetts Maritime Academy, a man who had followed the sea for a time, who grew up and worked on Cape Cod, who moved into town and state politics in the minority party, who found time to earn a Master's degree in Education and a J.D. degree, Aylmer was chosen from a considerable field of candidates not least because of his great interest in the Academy, his years of work in the Massachusetts Senate to help see its physical plant and campus built, and the belief that he could return discipline and order to what had become a trouble wracked campus. Due to massive enrollment increases in the mid-1970s, from 381 cadets in 1972 to 801 in 1975 discipline had declined, the Academy's academic quality had suffered and its graduates were less desired by shipping companies than in the past.

When Aylmer came into office he was fortunate in inheriting a strong faculty and a strong and able academic dean, and he soon built strength in other areas. John Gardner, author of such books as Excellence, Self-Renewal, and No Easy Victories recently completed a volume on Leadership. The new book is the result of study and personal observation of what makes "the best leader." He states

"The best leader is one who ensures that appropriate talent and skill are built into the team. Every President since Truman has admired the spunky, plain spoken man from Missouri. I suspect it appeals to them that a man so battered by criticism while in office could be so well treated by History. But I have not known one of them who, in praising Truman, mentions one of his greatest qualities--his gift for surrounding himself with individuals of exceptional quality."¹

As Trustees we find that President Aylmer has a similar ability. Most of the administration working with him is strong, able, and active. The Regiment of Cadets is well disciplined and develops strong student leaders. The faculty is distinguished by its depth of experience and its breadth of knowledge. The Vice President for Academic Affairs (who prefer the title of Academic Dean) is respected and appreciated by the entire campus. The success of the current Vice President of Administration and Finance is recognized by faculty, staff, and Trustees. The current master of the Training Ship Patriot State is appreciated by the Cadets on their cruise, some of them privately calling him a "real salty dog." John Aylmer has surrounding himself with a core of able administrators.

1

John Gardner. Quoted in Common Cause, Volume 15, Number 5, September/October 1989, p. 36.

Further, in part due to his experience in the Massachusetts legislature, he has been able to assure that the institution he heads has the financial support for its mission. He was instrumental in obtaining the Patriot State and has good relations with MARAD for its partial support.

After stating the above, as Trustees we are also aware of some of President's Aylmer's weaknesses. Though he has an "open door" policy which is real, and which some members of the campus community feel free to use, he has not been a first rate communicator. He, like many people, gives way at times to bluntness or sarcasm, often no doubt after strong provocation, but never wisely. The Trustees are pleased to note distinct improvement this semester in communication between President and Faculty and will continue to monitor its progress. His ego is strong as any leader's must be, but its manifestations at times have not helped him in his work as president. Even one of his strong points, his genuine love for the Academy, is also at times a detriment to his seeing the full ramifications of problems concerning faculty/presidential relations, or the propriety of continuing the custom of inviting civilian guests for part of the training cruise as has been the custom for years long before he became president. In relation to this matter (guest/observers) the Trustees have developed a cruise observer policy under which all observers will be approved by the Trustees.

The question of leadership is crucial to any institution, none more than for a college. As Trustees we have thought

long and hard on this matter, and have chosen to support Mr. John F. Aylmer for the indefinite future. John Aylmer has done a number of things very well in his busy and successful life. He has adapted to change before, and if he is to remain President of Massachusetts Maritime Academy, he must do it again.

In a democratic society questioning and attacking leaders in the press and within the organization has become a well established and frequently quite justifiable cottage industry. The leader who cannot stand up to criticism, hold to his principles, change his style and procedures where appropriate, and ride out the criticism, will go. The true leader can change, in both style and procedure, while retaining the ideas and principles which brought him to his position in the first place.

We believe that John Aylmer understands the above statement. Possible he will not spend all of the remainder of his working days at the Academy, but for the near future the Trustees believe that the Academy needs him.

RESOURCES

The Trustees are fully conscious of the Academy's need to reallocate its resources to successfully increase total student body enrollment and the minority component in that enrollment. In addition, reallocation of resources must occur to support new majors in September, 1990. Planning is based on the expectation of continuing level funding of the Academy at the

rate of 8.8 million dollars annually as stated by the Chancellor in relation to the budget for 1989-1990.

The Admissions Office has been strengthened by the following actions:

1. The transfer of Lieutenant Chris Kapp from Counseling and Placement to full time work in Admissions for September, 1989.
2. The hiring of Mr. Fugi Fulgerace (a minority group member) as Associate Director of Admissions in September, 1989.
3. The hiring of Ms. Lisa Gusmini as a new Admissions Officer in September, 1988, with her work concentrated on increasing the recruitment and admission of women to the Academy.
4. The assigning of 40% of Commander Carolyn Bolling's work time to minority recruitment.
5. The diversion of more college travel money to Admissions to make possible additional school and college night visits.

While on the topic of enrollment and resources, it may be helpful to compare current costs at the Maritime Academies of California, Maine, and Massachusetts. [The statistics come from the Chronicle of Higher Education, October 25, 1989, pp. A21-22 and do not list New York, Texas, and Great Lakes academies because figures appear to have been unavailable for this current semester]

<u>Academy</u>	<u>Op. Budget</u>	<u>Enrollment</u>	<u>increase/decrease</u>
California	\$ 6,642,000	375	+ 6%
Maine	6,557,000	484	+43%
Massachusetts	8.056,000	602	-4%

Note that the cost per cadet at MMA is 99% that of a cadet at Maine and 76% that of a California cadet.

To meet the fiscal requirements of the proposed new majors which should be available in September, 1990, the following additions or adjustments in resources will have to be made.

For the Plant and Facilities Engineering major, a program coordinator/engineering professor will be needed at a salary up to \$50,000. Four part-time instructors for a total cost of \$20,000 to \$25,000 from the 03 Account must also be obtained.

For the Maritime Management major one MBA is required whose position will come from a currently vacant Social Science faculty slot. We anticipate a steep decline in the number of students currently enrolled in the Business Management concentration and therefore do not at this time believe the new major will increase costs.

For the proposed Maritime Environmental Protection major positions may be available from one or two of the twenty-one current positions unfilled due to budget reversions and recent enrollment declines. We also anticipate a formal or informal affiliation with the Woods Hole Oceanographic Institute to cover some of the course work. If all goes well, those cadets choosing this major will have their educational experience much enriched by this opportunity.

There must be reallocations to meet the need for a new Academy general catalogue, as the one now available is no longer current. Admissions needs assorted publications, and Placement needs a new, updated brochure. Captain Desrocher, Vice

President for Financial Affairs, assures us [Trustees] that this can be accomplished within the level funding.

Finally, as mentioned elsewhere in this Plan, the Trustees are pleased to back the Academy's request for ten tuition waivers from the Regents dedicated to minority students. The College's administration would use the Massachusetts Maritime Academy Foundation to purchase annually up to ten complete sets of uniforms which will cost up to \$17,000, and every effort will be made through Alumni Association giving and current campus financial aid to pay board and room costs of up to ten minority students annually.

FINAL STATEMENT

Considering thoughtfully the question of merger between Massachusetts Maritime Academy and Southeastern Massachusetts University, the Trustees are impressed by the unanimity of members of both the Visiting Team and the Study Team. Their reports indicate no advantage to the State or to its students from such a merger. The Visiting Team noted on page three of its report that:

" . . .detailed analysis shows that the potential benefits [of merger] would probably be achieved only at 'any' unacceptable educational and financial cost. . .We do not recommend the merger option."

To add to the above we include material from a statement by Captain Geoffrey Motte, Academic Dean

Since the underlying basis for considering the SMU/MMA merger is annual cost per student and declining enrollment, it seems most appropriate to present such costs in correct perspective as follows:

- | | | |
|--------------------------------------|-------------------|-------------------|
| 1. State Budgets for Academy | FY88 \$ 9,099,458 | FY89 \$ 8,898,263 |
| Reverted to State & tuition payments | <u>1,309,597</u> | <u>1,152,751</u> |
| Actual Costs | \$ 7,789,879 | \$ 7,745,512 |
| Student Enrollment | 609 | 602 |
2. These costs are compared with the other eight state colleges and engineering colleges within the state universities:
- (a) MMA shares common contractual controls with the other state colleges calling for an academic work year of two semesters totalling 155-160 days. Massachusetts Maritime Academy also conducts a sea-semester of 60 days for a total work year of 215-220 days, i.e., 220/160 or 1.3375 of the state college standard.

Thus realistic cost per student for comparison with other state colleges is:

FY88 \$12,791/1.375 = \$9.302

FY89 12,886/1.375 = 9,357

(b) MMA costs are often compared with other engineering colleges within universities. There the actual cost/student is difficult to detect and masked by lesser costs of non-laboratory programs. An interesting paper by David Reyes-Guerra, Executive Director of Accreditation Board for Engineering and Technology (A.B.E.T.) attempts to estimate such costs by using a multiplier of 1.25 on out-of-state student costs, assuming that they constitute 80% of the cost and the university subsidizes 20%. MMA cost/student compares well with Dr. Reyes-Guerra's average costs for an engineering student.

(c) President Brazil of SMU recently gave a general estimate of \$9,000 per year for engineering students at SMU--close to MMA's comparative cost factor given in 2 (a) above. It appears that Lowell University costs are in this zone.

3. A summary of a 1989 special report, "Engineering Education in Florida," indicates an average expenditure for small United States engineering college with 30 to 60 faculty of \$176 per student credit hour. This figure includes faculty and administration costs but not building and research costs. MMA's comparison costs are \$198 per student credit hour which compares well considering the Academy maintains both a shore side and seagoing campus.

4. A substantial reduction in per students costs can be demonstrated by employing the economics of scale (as enrollment rises) extrapolated from FY89 student costs.

MMA STUDENT COSTS EXTRAPOLATED FOR FY89

	602	650	700	750	800	850
FY89 Budget	8,898,623	8,898,623	8,898,263	8,898,263	8,898,623	8,898,263
Reverted	328,804	328,804	328,804	328,804	328,804	328,804
Operating Budget	8,569,459	8,569,459	8,569,459	8,569,459	8,569,459	8,569,459
Tuition returns @ rate 1368/ Student	823,947	889,200	957,600	1,026,000	1,094,400	1,162,800
Actual Cost to State	7,745,512	7,680,259	7,611,859	7,543,459	7,475,059	7,406,659
Cost Per Student	12,866	11,816	10,874	10,058	9,344	8,713
Comparison/Student Cost Using 1.375 Divider	<u>9,357</u>	8,593	7,909	7,315	6,795	6,336

On page twenty-four and twenty five the Visiting Team elaborated upon its reasons against the merger of the two institutions. They noted that in any such merger

" . . . SMU because of its size and comprehensiveness of program would become the dominant institution. A merger would almost certainly lead to a diminution and probably ultimately termination of the paramilitary maritime program of the Academy."

While recognizing the possible attraction to some outside of the two institutions in seeing the Massachusetts Maritime Academy become part of a general purpose university , with the possibility of shared faculty and greater resources, the Visiting Team recognized

" . . . opposing philosophical orientation of the two institutions. . . . Merger could lead to considerable conflict and frustration on both campuses and could prove very disruptive [emphasis added] to the future development of the Academy programs."

The Study Team agreed, indeed emphasized the reasons already noted against merger by the Visiting Team. They stressed the need to avoid "an added layer of administration between the Academy and Trustees"; who, it must be noted, would of necessity be concerned with an entire university rather than just one college in that larger institution. In addition, the Study team also pointed out on pages thirteen and fourteen of their report the advantages of more cooperation between SMU and MMA with which we agree, fully. The Trustees believe in valid and appropriate affiliation and are pleased to consider them.

" . . . in areas of mutual faculty interests, such as sharing course offerings or collaboration in the development of new initiatives which may be generated through the Marine Science Center of Excellence."

During our investigation we have found nothing to justify any compelling reasons for merger, and we have carefully considered the matter. We do find from a careful examination of the present Academy and its various aspects every reason for it to remain autonomous. We are sure that the economic contribution of the graduates of the Academy to the welfare of Massachusetts fully justifies its continuation.

1. Massachusetts Maritime Academy itself generates a total (direct, indirect, and induced) of \$15,385,000 in economic activity within Massachusetts.
2. The Academy's alumni who live in Massachusetts generate an additional \$56,554,147 in direct spending within the state of which \$13,535,879 is in the form of state and local taxes.
3. The report estimates that the state receives a return of at least 10.5 times its annual budget allocation in tax revenues, direct and indirect spending, induced spending, and savings from the institution, alumni, and current students.

Source: Dr. Robert Camerford, Ph.D., economist with the University of Rhode Island.

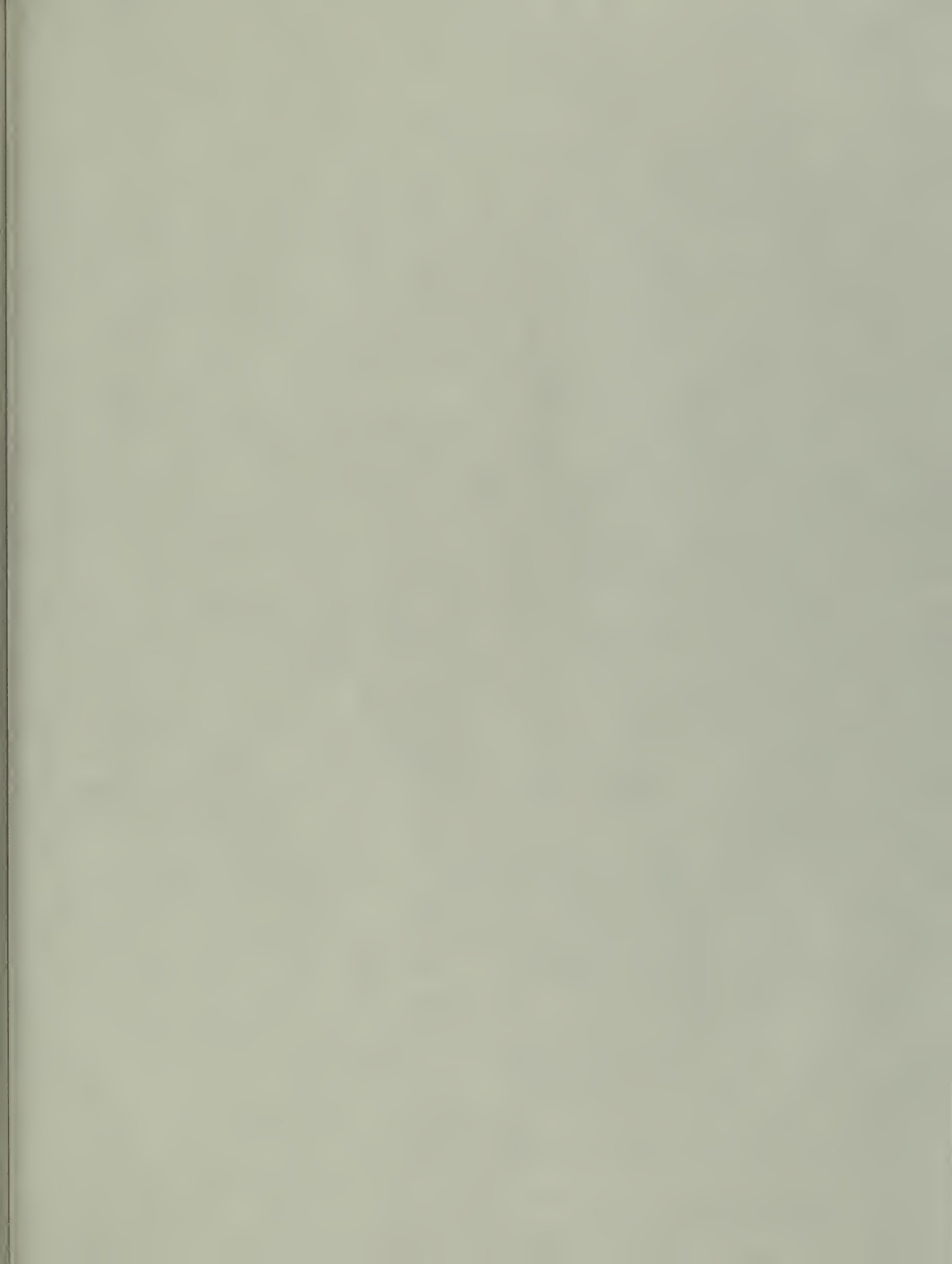
But we do not want the Academy to remain unchanged. It cannot be static in a changing world. As Trustees we have our eyes open to future possibilities which build upon the Academy's recognized strengths.

We believe the faculty is dedicated to excellence in teaching and research and to attain those goals makes itself very available to students. We note with pride the tutorial opportunities, especially for the Freshman (Fourth Class) cadets, yet equally available to all students in need of help.

We are also impressed with the manifest research abilities of many of the faculty in addition to their excellence as teachers.

As Trustees we are convinced that the curriculum must and will be broadened over the next few months by the addition of two and possible three new majors which build on the Academy's long standing programs in Marine Transportation and in Marine Engineering. We see this new direction, and the four concentrations already developed over recent years, as indications of the willingness of faculty and administration to move positively toward academic change within the Academy's proper educational realm.

The exercise of working on this report has shown us in new detail the great inherent strengths throughout this college, from the proud cadet corps and the fine athletic programs to the excellent faculty and very competent administration. We sincerely believe that the considerable increase this semester in enrolled woman cadets will be matched next fall by larger numbers of students coming from the minority community. We are sure that this will come not only due to better planned and executed recruitment, but also from a continuation and expansion of programs such as that run by the Academy with South Boston High School for able minority students interested in learning about opportunities in marine science. In no sense is this the time to merge. It is the time to change that in the Academy that needs changing, expand what is already recognized as fine and solid, and for the rest, stay on course and look for a fair wind.



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